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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/006,007	12/04/2001	Katsuhisa Aratani	09792909-5311	8500

7590 06/17/2004  
SONNENSCHN NATH & ROSENTHAL  
Wacker Drive Station, Sears Tower  
P.O. Box 061080  
Chicago, IL 60606-1080

EXAMINER

WILCZEWSKI, MARY A

ART UNIT	PAPER NUMBER
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2822

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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# Office Action Summary

Application No.

10/006,007

Applicant(s)

ARATANI, KATSUHISA

Examiner

Mary Wilczewski

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 21-28 is/are rejected.
- 7) ☒ Claim(s) 6-11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☒ Certified copies of the priority documents have been received in Application No. 09/233,653.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, and 21 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Gallagher et al., U. S. Patent 5,640,343.

Gallagher et al. disclose a method of producing a memory chip comprising presenting a memory substrate 100 having a system region (local word line 40) and fabricating a data cell region (38, 31) on the substrate, see figures 10A, 10B, and 10C.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gallagher et al., U.S. Patent 5,640,343.

Gallagher discloses a data cell substrate having a plurality of protruded and recessed areas (p-type regions 39 and regions of insulating material 30), forming a plurality of first stacks 38 on the plurality of protruded and recessed areas, disposing

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insulating material 30 between the stacks, and forming a second stack (layers 31, 30, and 34) on each adjacent first stack, see figures 10A, 10B, and 10C. The recessed bottom surface of p-type layer 39 and the protruding corners of insulating material 30 are deemed to meet the limitations of presenting a data cell substrate having a *plurality of protruded and recessed areas*, since the claim does not expressly recite that the surface of the substrate has protrusions and recessions. Gallagher fails to show that a plurality of stacks are formed, however, from the disclosure of Gallagher et al. (see, for example, column 11, lines 31-33; claims 1 and 10; and figures 1B and 1C), it would have been obvious to one of ordinary skill in the art that a plurality of memory cells would have been formed on the substrate 100 in the embodiment of figures 10A, 10B, and 10C to form a memory cell array.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3-5 and 22-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The references in lines 2 and 3 of claim 4, to “an external pad” and “a word line pad”, respectively, make it unclear if the external pad and the word line pad referred to in claim 4 are the same external pad and word line pad referred to in lines 2-3 of claim 3. Presumably, the external pad and the word line pad referred to in both claims 3 and

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4 are the same (which is consistent with what is disclosed in Applicant's specification), therefore, it is suggested that in line 2 of claim 4 the reference to "an external pad" be amended to "the external pad" and, likewise, in line 3 of claim 4, "a word line pad" be amended to "the word line pad".

Claim 22 improperly depends from claim 61. Claim 22 should depend from claim 21.

***Allowable Subject Matter***

Claims 6-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 3-5 and 22-28 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not teach or suggest the claimed method of fabricating the data cell region on the memory substrate including the steps of forming a first stack having a resin, stamping the resin and etching the resin to form a plurality of adjacent first stacks, forming a second stack having a second resin, stamping the second resin and etching the second resin to form a plurality of adjacent second stacks. The prior art also does not teach or suggest a first stack comprising a metal layer, a silicon layer, and a recording film, as recited in claim 22. The prior art also does not

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teach or suggest forming a word line pad, a bit line pad and an external pad, as recited in claim 3.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Wilczewski whose telephone number is (571) 272-1849. The examiner can normally be reached on Monday and Thursday.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



M. Wilczewski  
Primary Examiner  
Tech Center 2800

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